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ABSTRACT

This study compared two contrasting preservice teacher training programs, analyzing the terminal objectives, the objectives prerequisite for accomplishing the terminal objectives, and strategies used to accomplish prerequisite and terminal objectives. The analysis was designed to clarify similarities and differences between the training programs, to assess the efficacy of the training programs, and to assess the value of the task analysis procedures for formative and summative evaluations of inservice teacher training programs. The study indicated that such a task analysis was useful for program developers, teacher trainers, consumers, and educational evaluators for more precisely characterizing educational programs and their teacher training components. (Author)

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USING TASK ANALYSIS TO GENERATE TEACHER TRAINING OBJECTIVES AND ACTIVITIES AND EVALUATE THEIR ADEQUACY

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In this study the objectives for the training of teachers in two contrasting preschool programs are compared. Task analysis is done to help determine how objectives relate to one another, to help identify similarities and differences between the teacher training programs, and to help make clear to developers and users what skills and attitudes teachers of the two programs need to properly implement the programs.*

The programs analyzed are the Responsive Care Program, a program developed at Syracuse University under the leadership of Margaret Z. Lay, and the program of the Demonstration and Research Center for Early Education (the DARCEE program), developed at Peabody College under the leadership of Susan Gray and others. Both programs were funded in part over the past several years by the National Program on Early Childhood Education, a program that the U.S. Office of Education asked CEMREL, Inc., a national laboratory, to direct in 1970. The mission of CEMREL's work with both programs was to help them develop materials and training strategies that would make possible replications of their programs elsewhere. Both

*The analysis was done after the development and use of each preservice training program, as a means of considering the appropriateness and adequacy of the training objectives and activities and as a means of assessing the usefulness of the particular method of analysis. See Appendix A for a brief description and comparison of the preservice training programs that were actually administered.

investigators were on the staff of CEMREL, and both worked closely with the programs' development staffs to assist them in the development of training strategies and to assist CEMREL in its evaluation efforts. Since November 1973, the relationship between CEMREL and the two programs was terminated when the NIE terminated funding for the cooperative enterprise.

The two programs contrast greatly with one another: They differ, for example, in their assumptions about learning. Syracuse assumes optimal learning would probably occur when a child's basic physical needs are met, when he/she is in a rich environment (an environment where there are many activity options), to which he/she has continual access. An important aspect of the rich environment are adults who can react to the children, providing instruction based on their diagnosis of what the child is doing at the moment in the activity he/she has chosen. The Responsive Care Program rejects a set of instructional objectives, and it also rejects using carefully planned, sequenced instruction as the most productive method of teaching (Lay, 1972, p. 6). DARCEE, on the other hand, assumes that the best learning opportunities occur when the teacher plans in advance instructional activities to accomplish a specific set of objectives. The teacher carefully selects the objectives to teach each day according to a set of sequencing principles DARCEE has offered.

There are many other differences between the programs: DARCEE emphasizes the teacher controlling the environment to minimize distractions, whereas the Responsive Care Program recommends an environment that offers the child many options. DARCEE emphasizes the use of behavior modification theory and practices to control children's behavior and to instruct, whereas the

Responsive Care Program encourages teachers to use a variety of approaches, with behavior modification being perhaps one of the approaches. The DARCEE program emphesizes organizing the day according to a time schedule, whereas the Responsive Care Program uses spatial arrangements to provide structure for the program. The DARCEE program recommends two to three teachers for twenty children (only one of the teachers should be considered a lead teacher, though), whereas the Responsive Care Program recommends six or more adults for thirty-five to fifty-five children. In a word, the two programs vary considerably from one another.

Given the major differences between the programs, there should be many differences between the teaching competencies required by the programs, and the differences in the competencies should have other ramifications for training and other program variables. Such differences and their ramifications are the focus of this paper.

The Nature of the Analysis

In analyzing instructional objectives for training we divided the objectives into two categories: (a) those that pertain to skills teachers need for planning and setting the stage for interactions and (b) those that pertain to skills teachers need for interacting with the children.* Such a breakdown of teaching skills is not unique to this analysis (see Jackson, 1968). We further divided the objectives related to planning and setting the stage for teacher-child interactions into the subcategories of

*Other skills not dealt with in this paper are those related to teacher-teacher interactions--to the skills of planning, implementing, and evaluating instruction as members of instructional teams--and the skills involved in working with parents.

"constructing physical and temporal arrangements" and "planning for instruction," and we divided the objectives related to teacher-child interactions into the subcategories of "behavior management" and "instruction."

For each of the skill subcategories just mentioned we listed numerous objectives. These objectives were related to each other in the manner suggested by Gagne (1967), with some objectives being prerequisite for other ones. As we constructed networks of performances, we discovered we were using the pattern summarized in Figure 1.

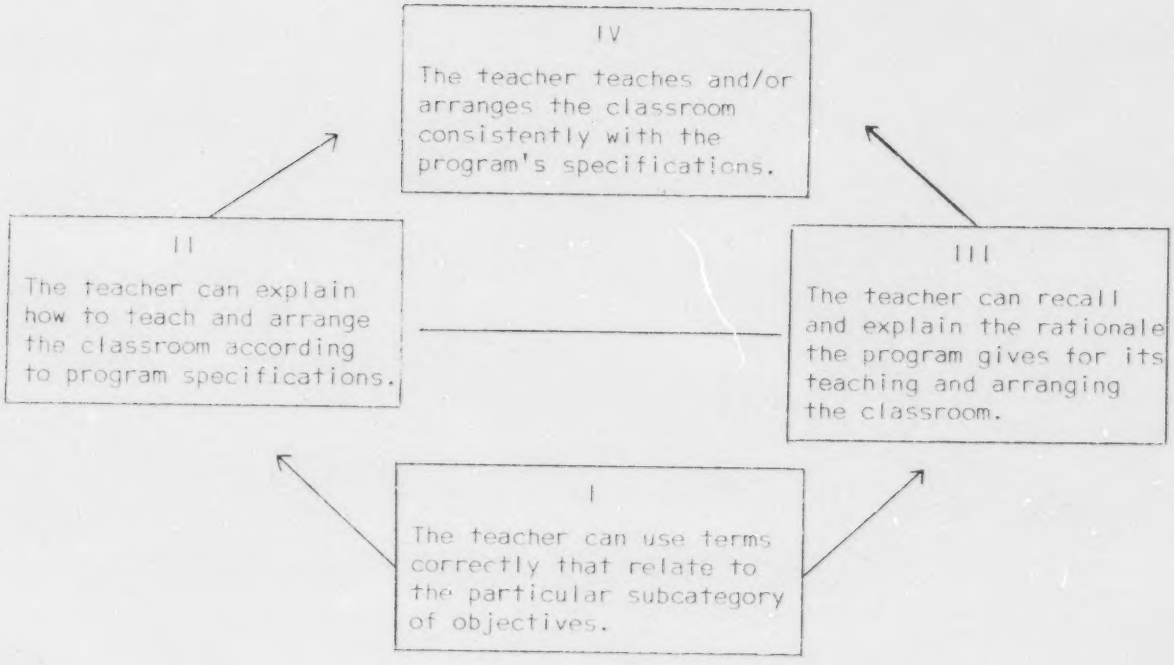
IV
The teacher teaches and/or arranges the classroom consistently with the program's specifications.
II
The teacher can explain how to teach and arrange the classroom according to program specifications.
III
The teacher can recall and explain the rationale the program gives for its teaching and arranging the classroom.
I
The teacher can use terms correctly that relate to the particular subcategory of objectives.

Figure 1. A Scheme for the Analysis of Training Objectives

From a Bloom perspective objectives of the Type I sort in Figure I fit into the category of knowledge objectives, in particular into the category "Knowledge of Terminology" (Bloom, et. al., 1956, p. 201), Types II and III objectives are a combination of knowledge and comprehension objectives ("Knowledge of Specific Facts," "Knowledge of Principles and Generalization," and "Translation"), whereas Type IV objectives are examples of application objectives. When we consider the individualistic ways teachers plan and organize space and time and interact with children, we could say that the teacher's way of teaching is his own synthesis (see Figure 2.)

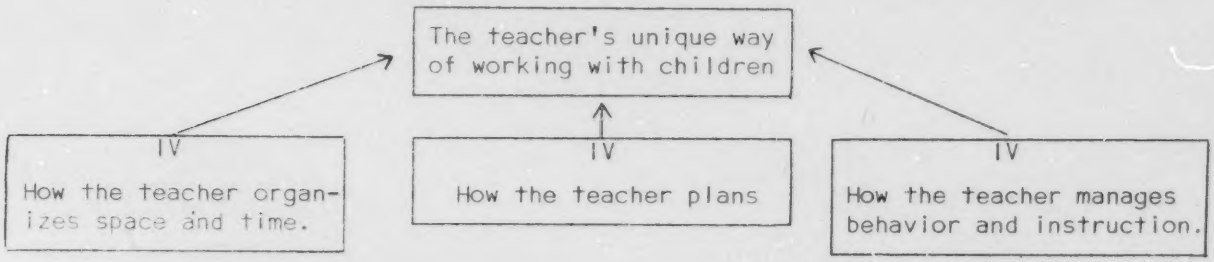
The teacher's unique way of working with children
IV
How the teacher organizes space and time.
IV
How the teacher plans
IV
How the teacher manages behavior and instruction.

Figure 2. Interrelationships Among Teacher Competiveness

What follows is a comparison of the training objectives that our analysis suggests are appropriate for the DARCEE and Syracuse programs. The analysis is a compromise between oversimplification and detailed microscopic analysis.*

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*The early termination of funding precluded the possibility of a more detailed analysis of the two programs. For the same reason the investigators had a longer association with the DARCEE program than with the Responsive Care Program.

Comparison of the Program's Training Objectives: Objectives that pertain to setting the stage for teacher-child interactions.

Physical and Temporal Arrangements. Two charts are presented in Figure 3 that are more specific versions of Figure 1. These may be used to help compare objectives pertaining to physical and temporal arrangements in the DARCEE and Syracuse Programs.

Insert Figure 3 about here.

Figure 3 could easily mislead one to believe that the objectives of the program are similar. All that is similar is the general relationship among the objectives. What is different is the substance of the objectives, as a comparison of each objective's indicators reveals. Indicators of Objective IV of the Responsive Care Program include the following observable behaviors:

1. The teacher divides the indoor space children will use into these areas: (a) active play space (where running, wrestling, and shouting are permitted); (b) expressive space (where water play, sand play, role play, and art projects take place); and (c) task space (where children may interact with books, puzzles, and small manipulative toys).

2. The teacher chooses appropriate materials for each of the three main areas. E.g., the teacher places the balls, jungle gyms, pull and push toys in the active area; the clay, paints, water, crayons, and scissors in the expressive areas; and the blocks, pegs and pegboards, and puzzles in the task area. Of course, many other materials are included in each area, and it is often appropriate to find some materials in more than one area. The "Handbook for Responsive Care Administrators" may be used to help determine how appropriately the teacher equips each area.

3. The teacher enforces ground rules that are appropriate for each area. Each day care center may differ in its specific ground rules; yet it should be clear that behavior the teacher permits in one area, such as wrestling and running in the active area, may be forbidden in the other areas.

4. The schedule the teacher and his/her team set up should allow children to make their own choices among the three areas during almost the entire day.

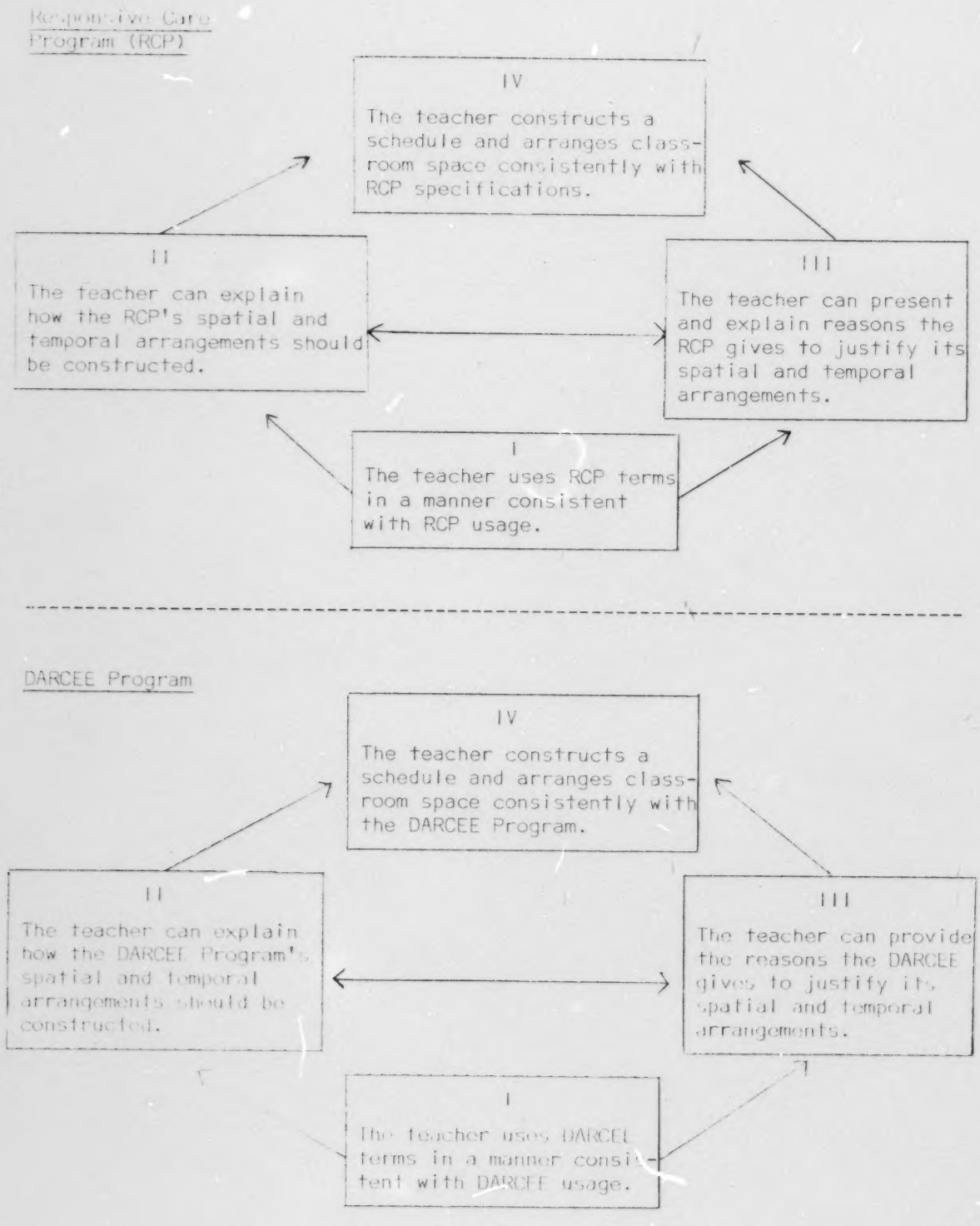

Responsive Care Program (RCP)
IV
The teacher constructs a schedule and arranges classroom space consistently with RCP specifications.
II
The teacher can explain how the RCP's spatial and temporal arrangements should be constructed.
III
The teacher can present and explain reasons the RCP gives to justify its spatial and temporal arrangements.
I
The teacher uses RCP terms in a manner consistent with RCP usage.
DARCEE Program
IV
The teacher constructs a schedule and arranges classroom space consistently with the DARCEE Program.
II
The teacher can explain how the DARCEE Program's spatial and temporal arrangements should be constructed.
III
The teacher can provide the reasons the DARCEE gives to justify its spatial and temporal arrangements.
I
The teacher uses DARCEE terms in a manner consistent with DARCEE usage.

Figure 5. Physical and Temporal Arrangements Objectives in the DARCEE and Responsive Care Programs.

Indicators of Objective IV for the DARCEE Program are quite different:

1. The teacher follows a time schedule (usually posted on the wall or bulletin board) that provides for: (a) large group instruction at the beginning and end of the school day (15-30 minutes), (b) small group instruction (two periods at 15-30 minutes each), (c) selected free choice activities (15-30 minutes), (d) times to go to the bathroom, have snacks, and have outdoor play. The schedules should resemble those written in The DARCEE Teacher's Guide. The amount of time allocated to large-group instructional sessions and small-group instructional sessions increases as the school year progresses. The time schedule is predictable and changes only slightly from one day to the next.

2. The teacher rearranges classroom space for large group instruction, small group instruction, and selected free choice.

3. The teacher keeps the classroom free from extraneous distracting stimuli. On the first day of school the walls are bare. As the year progresses items are added after they are introduced by the teacher, usually in the context of a unit.

A difference between the programs and the teacher behaviors they require is who decides on how children should spend their time. The Responsive Care Program emphasizes letting the child choose how to use his time, whereas DARCEE gives the teacher that responsibility. As an analogy, the Responsive Care Program spreads out activity alternatives much as a cafeteria spreads out food alternatives. There is also an assumption that the child's choices are likely to be reasonable and productive for his development (Lay, 1972). DARCEE, on the other hand, assumes that DARCEE-trained teachers can make wiser choices of what to do than the children so far as their development is concerned. Indeed, DARCEE has specified for teachers an elaborate set of sequencing principles and objectives to help plan instructional activities. As the next portion of this paper makes clear, planning is given much more emphasis in the DARCEE program than it is given in the Syracuse program, and the DARCEE program has consequently spelled out many skills teachers must have as planners of instruction.

Just as the Type IV objectives that pertain to physical and temporal arrangements differ, so do the Type I, II, and III objectives differ. For example, as regards the Type I objectives, teachers in the DARCEE program would need to be able to use terms like "large group instruction," "small group instruction," "selected free choice," and "stimulus free classroom;" whereas in the Responsive Care Program teachers would need to be able to use terms like "active area," "task area," and "expressive area" in the technical senses used in the respective programs.

Figure 4 illustrates objectives for planning for each program.

Insert Figure 4 about here.

The indicators of Type IV objectives for planning in the Responsive Care Program include the following behaviors:

1. The teachers decide which materials and activities to make available to the children in the respective areas they will supervise. In most planning they do not specify the means or the ends of instruction. Rather, they simply concentrate on providing a diversity of materials and activities that make possible a wide variety of learning experiences and outcomes for children. Usually, formal plans are not written, nor does the program prescribe such plans be written.

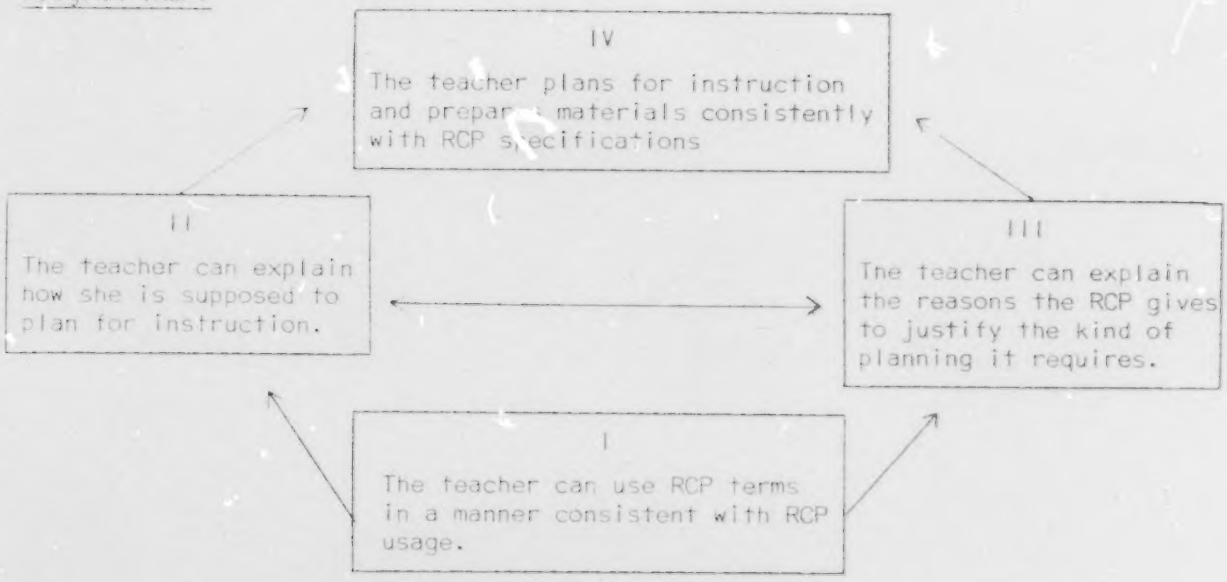
2. The teacher plans one or more special "invitational activities" which he/she offers to those children who choose to participate. The activities include field trips, dramatic plays, story reading, singing, and the like. The activities are almost always group activities. In this use, as in the preceding one, written plans need not be constructed.

3. The teacher plans for the "one-to-one" individual sessions she has weekly with each of the children that belongs to her group of "special children." She also keeps anecdotal records for those children.

As with the objectives related to setting the stage for interactions, the indicators of Objective IV for "planning instruction" are very different for the DARCEE program:

Planning for Instruction

Responsive Care Program (RCP)


IV
The teacher plans for instruction and prepares materials consistently with RCP specifications
II
The teacher can explain how she is supposed to plan for instruction.
III
The teacher can explain the reasons the RCP gives to justify the kind of planning it requires.
I
The teacher can use RCP terms in a manner consistent with RCP usage.

DARCEE Program

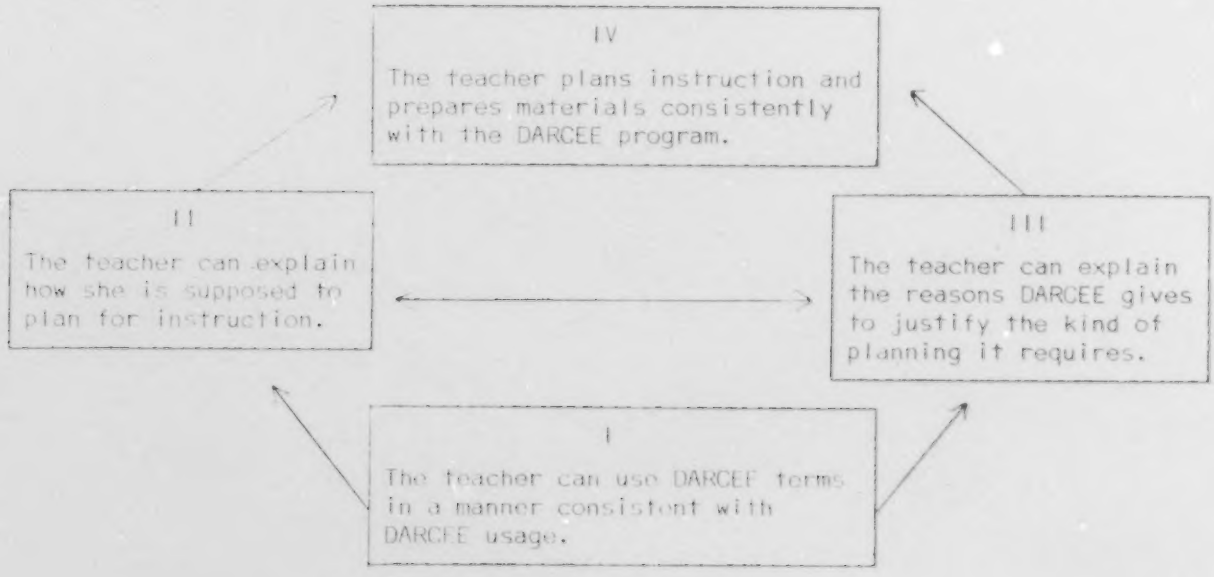

IV
The teacher plans instruction and prepares materials consistently with the DARCEE program.
II
The teacher can explain how she is supposed to plan for instruction.
III
The teacher can explain the reasons DARCEE gives to justify the kind of planning it requires.
I
The teacher can use DARCEE terms in a manner consistent with DARCEE usage.

Figure 4. Planning Objectives for the DARCEE and Responsive Care Programs

1. Each week, the DARCEE teaching team selects general activities and units to be used the following week and writes them as "block plans." The plans will serve to provide direction for the daily lesson plans.

2. All teachers write a lesson plan for each of two "small group" instruction periods. In addition, the lead teacher writes plans for the first large group instruction period of the day. The lesson plans specify behavioral objectives, materials, instructional strategies, and a back-up or "buffer activity." The objectives are taken from a master list which indicates the pool of objectives toward which instruction should aim and suggests a recommended sequence for instructional activities. Each teacher's plans reflect the progress individual children have made toward attainment of the DARCEE's overall cognitive and affective objectives. The large group lesson plan and one of the small group lesson plans deal with content related to units dealing with topics like transportation, farm animals, and winter.

3. Each day, teachers decide what new options will be offered during "selected free choice" periods, with variety and attractiveness of the options being major considerations.

At the level of Type II and III objectives teachers in the Responsive Care and DARCEE programs would be able to explain the procedures and rationales for the particular type of planning they each do. At level of Type I objectives Responsive Care teachers would be able to use properly the terms "informal instruction," "invitational activities," "one-to-one teaching," and "special children." DARCEE teachers would be able to use properly the terms "block plans," "daily lesson plans," "behavioral objectives," "units," and "buffer."

The differences between Responsive Care Program and DARCEE objectives for planning become even more apparent when one considers the skills that are required for satisfactory application at the Type IV level. The DARCEE program requires teachers to aim instruction toward an extensive, finite set of cognitive and affective objectives. The task of a DARCEE teacher in planning is then to decide for the children in her small group when and in what sequence to teach toward the particular objectives. In order to

teach toward the objectives in the proper sequence and at the proper time a teacher must understand and be able to apply the sequencing principles prescribed by the program and be able to locate the objectives in the master list of objectives (see Appendix B for a sample of the objectives).

In addition, the teacher must be able to diagnose each child's progress toward the objectives in order to select those objectives he can attain given prior accomplishments. Implicit in the diagnosis is the requirement of being able to write behavioral objectives and teach toward them and being able to judge when a child has mastered a particular objective. Such skills are complex and demanding to apply. The ambitious scope of the objectives is evident when one considers that the program requires them of paraprofessionals. Much time during training sessions is devoted to such matters.

The term "instructional objective" has a less prominent place in the working vocabulary of a RCP teacher. In fact, the term is not even part of the program's nomenclature. The program assumes there is insufficient knowledge about long-term effects of learning to specify a particular set of behaviors or skills all children should master. Rather, the program posits the general goal of facilitating children's acquisition of a broadened repertoire of behaviors, making the assumption that certain program conditions will positively influence children's repertoire of behaviors. Teachers are encouraged to leave open the ends and means of instruction, leaving the choice of learning outcomes and procedures very much to the child. Thus, the Responsive Care teacher has no objectives equivalent to DARCEE's to guide her. Nor does she have a finite list of categories to be followed in diagnosing responding to, and recording children's behavior.*

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*She does, however, have a set of suggested categories she could use in writing anecdotal records on child behaviors. The program emphasizes that these categories are not definitive and should not restrict teachers' behavior. Teachers are urged to add new categories and/or delete existing ones.

In her planning the Responsive Care teacher selects activities and materials that would seem to provide children with rich options for learning. She is to see the variety of instructional possibilities inherent in the materials and activities as opposed to planning to use the materials as instruments to accomplish particular objectives that are specified in advance. In contrast, the DARCEE teacher is supposed to plan activities and create materials always with an eye toward their being instrumental to the DARCEE objectives. His/her evaluation of instruction is guided by the same standard, that of the DARCEE objectives.

Objectives that Pertain to Teacher-Child Interactions

There are two kinds of objectives relating to teacher-child interactions: (a) those that pertain to the teacher's efforts to expand upon or change the children's knowledge, skills, and attitudes and (b) those that pertain to the teacher's efforts to obtain from children those behaviors that support and do not conflict with instructional activities. The former kind of objectives are herein called instructional, the latter behavior management.

Behavior management objectives in the Syracuse program. The behavior-management objectives in the Syracuse program may be charted as shown in Figure 5.

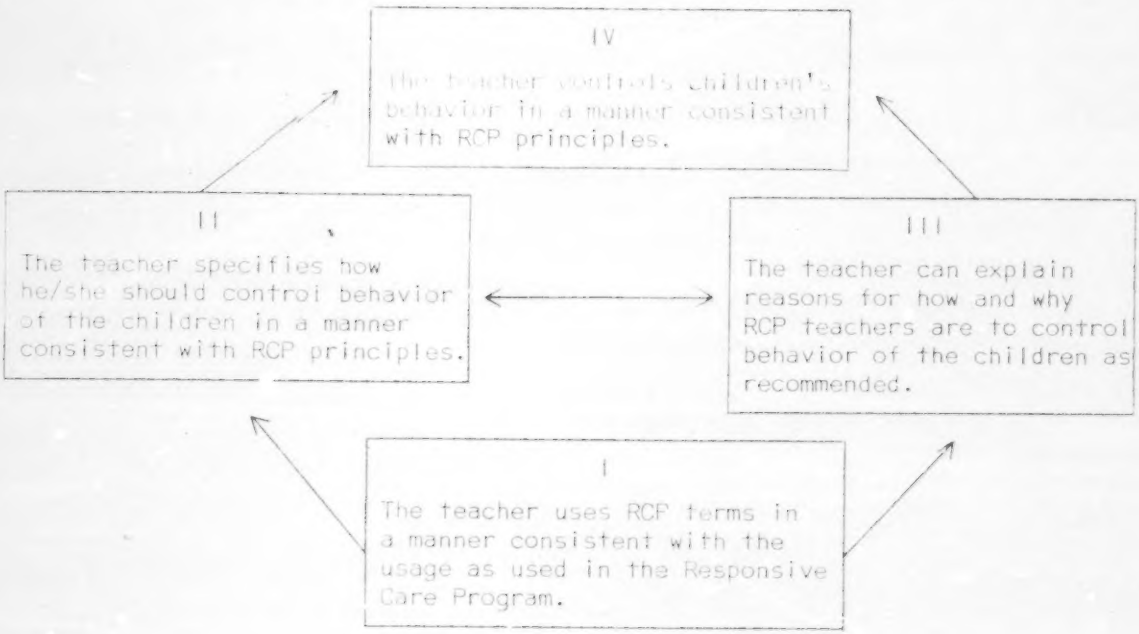
IV
The teacher controls children's behavior in a manner consistent with RCP principles.
II
The teacher specifies how he/she should control behavior of the children in a manner consistent with RCP principles.
III
The teacher can explain reasons for how and why RCP teachers are to control behavior of the children as recommended.
I
The teacher uses RCP terms in a manner consistent with the usage as used in the Responsive Care Program.

Figure 5. Behavior Management Objectives for the Responsive Care Program

The objectives specified in the administrator's manual for the Responsive Care Program are most closely related to the Type II type ("state ground rules for each area," "identify ground rule infractions in various locations and events," "cite alternative ways for use in above situations," and "predict how certain pieces of equipment may create inter-personal or other problem situations for children and discuss alternative strategies").

It may be inferred that not only should teachers be able to say what to do in the Responsive Care Program (Type II objectives); they should also be able to act in appropriate ways. What, in fact, does it mean to act in appropriate ways for the program? From the field notes taken during training, it is clear that almost any way of controlling behavior in the Responsive Care Program is appropriate. In fact, a training goal is that the teacher be able to cite many ways of responding. Lay, (1973, p. 14) explains, "Staff

members should be encouraged to consider and try out ways of 'disciplining' with which they feel comfortable and effective. Taking some action is considered to be imperative; which action is taken, however, is considered to be a matter of style and situation." That is, the teacher should broaden his/her repertoire of responses that may be used to control behavior; he/she should be able to control behavior in a greater variety of ways. So far as which way or ways the program prefers, the program does not take a clear stand; it simply suggests what ways of controlling behavior have seemed to the program's director to be most and least efficient (Lay, 1973).

Behavior management objectives in the DARCEE program compared to those in the Syracuse program. In contrast to the Syracuse program, DARCEE has specified behavior management objectives of the Type II and III kind:

> 1. Teachers will be able to explain clearly in their own words... the following DARCEE prescriptions and assumptions about behavior modification...[:]
>
> a. Children change their behavior and learn by being rewarded or punished for doing something. When children are rewarded, or reinforced, for doing something, they will want to do it again.
>
> b. DARCEE teachers can shape children's behavior, and indirectly their attitudes, through the use of non-material, positive reinforcers...when children act in desired ways.
>
> c. Positive reinforcement may be used by a teacher to:
>
> (1) help a child to do something he has never done before.
>
> (2) cause a child to continue doing something.
>
> (3) cause a child to stop doing something which is troublesome.
>
> d. When a child's behavior is extremely distracting or is dangerous, he should be removed from the group or, in some cases, the room until his behavior improves. (A Guide for Trainers of DARCEE Teachers, p. 78.)

DARCEE has also specified a Type IV objective: "When presented with real or simulated situations which are instances of items a-d in #1 above, the teacher will be able to suggest teacher responses that are appropriate in the light of DARCEE prescriptions (see The DARCEE Teacher's Guide, pp. 54-61 and A Guide for Trainers of DARCEE Teachers, p. 78)."

DARCEE's explicit training objectives not only differ from Syracuse's in the sense of including those of Types III and IV; they also differ in their substance: DARCEE has a theory of behavior management--namely, behavior modification--in contrast with Syracuse, which takes a relativist stance theoretically. Whereas Syracuse wants teachers to have a wider range of responses to children in behavior management situations, DARCEE wants teachers to become more proficient in using such techniques as modeling, standard setting, and reinforcing. One implication of this difference is that Syracuse's program not only tolerates but fosters diverse teacher responses to children's deviancy, whereas the DARCEE program strives to lead teachers to increased uniformity in their responses. In addition, the Syracuse program permits and justifies teachers' responding in the ways most natural to them in contrast to the DARCEE program, which in many ways requires teachers to make significant modifications in their interactions with children. Another implication is that DARCEE has a more precise technical vocabulary teachers must learn (Type I objectives) to help them analyze and discuss their teaching.

Instructional objectives in the DARCEE program. The DARCEE program has a specific set of procedures that the program recommends for teacher-child interactions. Those procedures, listed in the DARCEE Teacher's Guide pp. 142-144 as "Tips for Good Teaching" are as follows:

Tips for Good Teaching

1. Plan each activity for a specific purpose--to develop certain skills and attitudes. Check A Sequence of DARCEE Cognitive Objectives: A Record Keeping System for the Teacher.

2. Organize the material for the activity prior to doing the activity. Have the material ready in a box (Treasure Box) or bag near the table so you do not have to leave the children to get materials.

3. Choose a good place in the room for the activity (table, floor, corner) and place your materials where you will need them. In choosing an appropriate place in the room, consider where the other groups will be at this time, windows, traffic lanes, etc.

4. Place the children so that they can all see you and the material being used; be sure you can reach each child (you may have to move around).

5. Get the attention of all the children before beginning the activity. If you do not have their attention before you start the activity, chances are you will not gain their attention after getting into the activity.

6. Be enthusiastic about the activity (smile) and use a "Game" approach to get the children excited or interested in what you are going to do together.

7. Set standards (specific and clear directions). Standards should be set before giving out materials or engaging in the activity. Be sure to tell the children what you want them to do and how you want them to do it.

8. Give each child his material for the activity (puzzle, crayons and paper, paste and paper, game board) or hold your material where all children can see it (flannelboard, book, picture, object).

9. In an activity where each child has his own material, move around the group to give each child help or praise.

10. Sit on low chairs or stoop so that you can look at and talk directly to the children.

11. Always use the children's names--when asking questions, when giving directions, when talking about their work or belongings, when giving praise.

12. Keep the attention of the children by looking at them often, by touching them to praise them, by asking them questions they can answer, and by giving directions they can follow.

13. Praise the behavior you want to see--smile, touch child, use his name, tell him what he did right or well. Be positive!

14. Use a warm, pleasant manner with your children, but be very firm about what they are allowed to do. Give them limits!

15. Children have different abilities. Praise each child for what he can do and for his progress. Do not compare children.

16. Plan your activities to last for a specific amount of time. However, stop your activity while it is still fun for the children, so they will want to do it again another time.

17. You decide when the activity should end, and then collect the materials. Be sure to prepare the children for the close of the activity in a positive manner.

18. Always have another activity, a "buffer," planned in case the activity you have planned for this specific time is not going well or does not take as much time as you had thought.

19. If the children have made something from paper during the activity, print their names on their work as each child watches you. If possible, hang the papers on the wall where the children can see them.

20. Prepare the children for the next activity. Be sure to set standards for the transition time (either a brief wait between activities, or moving from one place in the room to another).

On other pages of the teacher's guide those behaviors are described in detail, are justified, and the vocabulary used to describe those behaviors are defined. Thus, a clear set of Type I, II, III, and IV objectives may readily be made to describe how teachers are to instruct students in the DARCEE program. From such statements it was possible to create a reliable observation system for determining the degree to which teacher behavior corresponds to DARCEE recommendations (Solomon, et. al., 1973).

Instructional Objectives in the Responsive Care Program in Contrast to Those in the DARCEE Program

The Responsive Care Program is unable to specify such a set of "Tips for Good Teaching" in the manner DARCEE does, for that program assumes teachers

could use a variety of techniques in teaching effectively. A second difference is that the Responsive Care Program maintains that the best learning occurs when there is informal, incidental teaching, teaching that relates to an activity in which the child is engrossed. Thus, DARCEE and Syracuse approaches to teaching are diametrically opposed, as indicated in Figure 6.

	Objectives	Strategies	Materials
Specified Ahead of Time by Teachers	DARCEE	DARCEE	DARCEE Responsive Care Program
Not Specified Ahead of Time by Teachers	Responsive Care Program	Responsive Care Program	

Figure 6: Comparison of DARCEE and Responsive Care Programs on the Plannedness of Instruction

The Syracuse model of instruction has been defined by the program's director as follows:

> Responsive instruction requires first, that the child be thoroughly immersed in something he really wants to do. Although this something may not necessarily be of his own choosing, this will often be the case. Second, it requires that the adult be sensitive to the "doing" and be aware of what the effort is that the child is making. Third, it requires that the adult further extend the child's experience within that context through a comment, question, suggestion, explanation, or material manipulation. For example, upon observing a child who has been using a balancing scale and blocks of wood systematically equating size with weight, the adult may offer a small heavy object and after observing the child's surprise, "Some little things are quite heavy, aren't they? Can you think of something else that is very heavy but very little?" (Lay, 1975, p. 190).

The model of instruction requires the teacher to be able to do the following:

1. Observe a child as he engages in an activity.

2. Be aware of what is engrossing the child in his activity, i.e., what is the child doing? Why does he continue to engage in the activity?

3. Have in mind a variety of reactions he could make to the child as he continues interacting with the instructional materials.

4. React to the child in a manner that not only maintains or enhances the child's level of interest, but that will also help the child do something he would otherwise probably not do.

Such teaching behaviors are found in DARCEE classrooms, especially during lunch time, snack time, and selected free choice. Those behaviors, however, are not regarded in the DARCEE project as the main mode of instruction the program proposes.

Implications of the Objectives for the Training: A comparison

Even though the particular knowledge and skills differ considerably for each program, the mode of training and the amount of time, energy, and resources required to learn to apply the skills may be either similar or markedly different. What follows is an examination and comparison of each objective in terms of the similarities or differences in the training tasks for each program's objectives.

Objectives that pertain to physical and temporal arrangements. The specific physical and temporal arrangements for the two programs are very different. Yet we find no basis for saying one is inherently more complex or difficult to understand than the other. In fact, the objectives in this area seem simple in both programs. Probably each could be explained clearly

in similar kinds of text or in a similar kind of audio-visual presentation. The terms teachers need to be able to use are concrete and simple to learn.

Objectives that pertain to planning for instruction. The knowledge and skills required of the DARCEE teacher for planning are significantly different from those needed by the Responsive Care teacher. Because of the differences in content, both the training procedures and, seemingly, the amount of time spent on this objective would not be the same for each program. While the DARCEE teacher must understand and be able to apply a complex set of behavioral objectives, sequencing principles, record keeping procedures, written lesson plans, a unit approach, etc., the Responsive Care teacher would need a very different repertoire of skills, those required for "responsive instruction." In fact, the Responsive Care Program gives relatively little emphasis to planning and record keeping, especially compared to the DARCEE skills. While the DARCEE skills are complex and demanding, they are also highly spec in indicating how, when, and to what ends planning is to be done. The training procedures for DARCEE in this area then are to be directed toward increased uniformity among teachers in terms of the various DARCEE recommendations for planning.

Objectives that pertain to instruction. The DARCEE program specifies cognitive, psychomotor and affective instructional objective, and to a considerable extent it specifies how the objectives are to be achieved (i.e., using the record keeping system, behavioral objectives, positive reinforcement, etc.). In a sense, the program encourages uniformity among teachers and among children through its high degree of specification of objectives and program conditions, or "essentials." The Responsive Care teacher's role in

instruction is quite different. The task of teacher training is significantly different for each program. In DARCEE teachers must be skilled in achieving program objectives which are finite and determined in advance of instruction. In the Responsive Care Program teachers must be skilled in diagnosing a child's involvement in a self-chosen task and be able to extend and enrich the child's learning through questions, comments, material manipulation, etc. The outcomes of the learning are not normally specified in advance.

Direct linkages between training and teacher competencies are difficult to demonstrate. We will, however, speculate about what types of training activities would seem to be appropriate for developing the skills for handling instruction as a DARCEE or as a Responsive Care teacher. The DARCEE skills would seem to be amenable to inclusion into a programmed learning package, if knowledge is sought. It is possible to break down terms such as positive reinforcement and behavioral objectives into smaller units in such a way that a programmed learning sequence could be written. At the application level the skills seem to be amenable to performance-oriented training such as microteaching specifically directed toward DARCEE instruction skills. With the Responsive Care Program specification of programmed learning sequences and structured microteaching seem less suitable, though what is suitable is not clear. Perhaps training for selected skills, such as asking probing questions and asking divergent questions, would be appropriate. In addition, being exposed to other teachers who, in a variety of ways, are considered to be competent Responsive Care teachers appear to be in order. Brainstorming, with other teachers, various possibilities for using materials--like playing cards, blocks, and a jungle gym--for responsive instruction was a procedure used in the Responsive Care training.

Objectives that pertain to teacher-child interactions: Behavior management. As in "instruction" above, the DARCEE program provides explicit guidelines and procedures for managing children's behavior, as indicated in the program "essential" of positive reinforcement and less directly, in other "essentials." Since the guidelines for the Responsive Care teacher are less specific, and, in fact, encourage diverse responses among teachers, teacher training procedures appropriate for teachers of the one program would be inappropriate for teachers of the other program. It would seem the Responsive Care teacher training program should help each teacher develop and refine behavior management skills that he/she feels comfortable with and which are effective. On the other hand, the DARCEE training program should help each teacher acquire and refine the particular behavior management skills the program recommends. Glaser (1962) makes a distinction between training programs by distinguishing between "training" and "education"; "training" is used when the end behaviors are readily specifiable and are typically convergent, i.e., training someone to use a slide rule; "education is used when the end behaviors are not readily specifiable and when alternative end products are acceptable (and desirable), i.e., being educated to be an artist or a creative writer.

In considering the DARCEE and the Responsive Care programs, it appears that the high degree of specificity of the DARCEE skills and the uniformity expected among teachers would place DARCEE teacher training objectives at the "training" end of the continuum. On the whole, the Responsive Care Program would be nearer the "education" end; yet, as we have demonstrated, the Responsive Care Program holds certain objectives for which end products of training can be readily specified. If our above analysis is valid, it is

incumbent on program developers to understand whether and to what extent their programs imply "training" or "education" of teachers and to avoid mistaking one for the other in establishing teacher preparation programs. Using "training" programs with teachers who have had a broad professional education and who feel competent to select their own program goals may lead to morale problems during training and implementation of the program.*

The Usefulness of This Kind of Analysis

A major reasons the authors applied the above analysis to the two pre-school teacher training programs was to assess the value of their task analysis method for developing training objectives and strategies. It was felt that a productive way to assess this method of analysis would be to use it with two sharply contrasting programs. This section of the paper considers the usefulness of the method of analysis and discusses a number of issues that the analysis highlighted related to the development of training programs.

First consider the benefits. The analysis can clarify what a teacher presumably must know and be able to do in order to implement a particular program in the classroom. Without such clarity a training program might lack direction, be inefficient, or even be counterproductive to the successful implementation of the program in the classroom. Using the analysis we have described, one can readily identify differences between programs. For example, in our analysis it became evident that a DARCEE teacher must be able to write and teach toward behavioral objectives recommended by the

*Extensive observation of training and conversations with teachers suggest that such a consequence is likely. As school people know, seldom are teachers passive recipients of innovations.

program. Yet, providing a Responsive Care teacher extensive training in the nature and application of behavioral objectives would not only be a questionable use of training time and resources-but might lead to a uniformity of teacher planning practices that the program does not wish to promote. We are not suggesting that this particular method of analysis is the only means by which training needs can be established. However, the analysis does serve that purpose and is one systematic means for considering training needs. Further, it can diminish the chances that program developers or users will overlook teaching skills required to implement the program and fail to provide training related to those skills.

By learning about the knowledge and skills needed by a teacher, one learns much about the nature of the program for children, the real target group of the program. Through the analysis, one learns much about such important matters as the kind of objectives the programs hold for children, how children are encouraged to spend their time, how a teacher interacts with children, and how deviant behavior is to be handled. At the same time, many of the empirical and normative assumptions of the program become more evident.

The analysis could be very helpful to administrators responsible for selecting new teachers. Rather than assuming training sessions must start from scratch in the acquisition of teaching skills and knowledge, administrators could attempt to select teachers who already possess philosophical orientations to those of the program and who possess at least some of the critical skills, especially those that would be most difficult to teach in a short training time. In addition, the administrator in a district that has several programs would have some basis for deciding whether a teacher candidate

would be more suited for teaching in one program than another. A teacher who possesses the skills and philosophical commitment to excell as a DARCEE teacher would not necessarily be the best choice as a Responsive Care teacher. In a like manner, a supervisor of teachers would be better able to supply teachers valid and useful feedback about their teaching performance when the supervisor understands the array of knowledge and skills needed by teachers to implement a particular program.

Another benefit, we found, was that the analysis highlighted a number of issues which seem particularly salient to the development of teacher training programs. Though the particular issues are not new, they seem worthy of special consideration in the context of training teachers to use new programs.

One question that intrigued us was whether training for teachers should parallel the programs they are to offer to children. That is, should teachers be taught in the same way they in turn will teach children? Such was generally the case in the DARCEE and Syracuse programs. The DARCEE trainers used behavioral objectives, consciously tried to use positive reinforcement with teachers in training, and permitted teachers few choices as to the ends or means of training. On the other hand, the Responsive Care trainers emphasized how the training was predicated on the notion that training for teachers of "open" programs like the Responsive Care Program should be "open" for teachers as the program is for children. Training for the Responsive Care Program should not require all teachers to experience precisely the same training activities or to accept the program's rationale and procedures as their own view of schooling. The Responsive Care training

was cafeteria style to a large extent, offering teachers choices for what and how they would learn, similar in that respect to the program children would experience. It would be ironic, if not inconsistent, for a program like the Responsive Care Program to operate a highly programmed training that relied heavily on formal instruction, when the program favors informal instruction for children. Likewise, teachers in DARCEE training might doubt the usefulness of behavioral objectives and positive reinforcement if trainers failed to use them in training. Such a situation would seem to be a "Do as I say, not as I do" issue, with the possible consequence of the program losing credibility with teachers.

Another issue to be considered is the validity of assumptions which our method of analysis seems to imply. The model implies that one can proceed from a set of training objectives to a set of instrumental training activities, which in turn will lead teachers to perform in desired ways in the classroom. The assumption continues that the appropriate teacher behaviors (and various program conditions) will result in certain desired learning outcomes for children. Rarely, if ever, can we demonstrate such a clean and positive chain of relationships (Rosenshine, 1971). We are not recommending that teacher educators stop trying to develop rational training programs in the face of such uncertainties. Rather, we urge making full use of the knowledge available, limited as it is, concerning the relationships among training, teacher performance, and children's learning; we suspect that when such knowledge is applied in conjunction with careful logical analyses of the relationships, training programs will be more likely to accomplish their goals than when less careful analysis is done.

A related question concerns the importance of Type III objectives. The question is, "How fully must teachers understand a program's rationale, the supporting empirical and normative assumptions, in order to effectively implement the program in the classroom?" One view is that teachers need only to know "how" to do something, not "why." An alternative view, which we hold, is that teachers are better able to make wise decisions in the classroom when they understand the rationale for the recommended program procedures. This issue, like the previous, is an important one and is worthy of further study.

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APPENDIX A

Comparison of Actual Preservice Training for the DARCEE and Responsive Care Programs

Comparison of Actual Preservice Training for the DARCEE and the Responsive Care Programs

Length of training. DARCEE training was completed in eight full days, including three evening sessions. Responsive Care training was completed in five full days, including three informal evening sessions. (The length of each training program was dictated more by the scarcity of resources and free time than by considerations of what the optimum duration of training should be.)

Setting where the training took place. Each training program was implemented at the respective program development sites, where demonstration classes could be observed and taught.

Program expertise of the person(s) conducting the training. In each case the persons conducting the training had long and intimate associations with the respective programs. All had been involved in the development of the programs and had taught and supervised in the demonstration classes.

The objectives of training. The objectives, stated in behavioral terms, for the DARCEE training were organized around the eleven program "essentials" plus objectives for long range planning, observation and teaching in the demonstration class, and the making of materials for classroom use. The objectives for the Responsive Care training were, on the whole, less specific about what the end products of the training should be. A typical DARCEE objective would be worded "Teachers will be able to write lesson plans that include clearly worded behavioral objectives (derived from "a sequence of DARCEE objectives") and appropriate teaching strategies and materials." A typical Responsive Care objective would be somewhat less specific, as, "The teacher will be able to identify some of his feelings about his own role as a learner and as a teacher in formal versus responsive instruction.

Training activities. Each training program utilized a combination of audio-visual presentations, lecture-discussion, small group activities, and outside reading, though the stance of the trainers differed as to the degree of prescriptiveness of the activities vis-a-vis the programs. Also, the training programs differed in the amount informal interaction encouraged among all participants (trainers and trainees) and in the amount of free choice activities offered. The Responsive Care Program emphasizes informal interaction and freely chosen training activities and inquiry. In that sense the Responsive Care training was less programmed and less formal than the DARCEE training. Another distinction between the training activities related to the diversity among trainers in interpreting their respective programs. DARCEE trainers presented a unified front in explaining how a

DARCEE teacher operates. Questions from teachers were treated with a strict constructionist view, using the Teacher's Guide as the standard. Responsive Care trainers, on the other hand, emphasized the diversity among RCP in their interpretation of aspects of the program. Often instead of giving "the answer," a trainer would say "Here is my view, but your view or another Responsive Care teacher's view may differ."

Resource materials used during training. The DARCEE and Responsive Care training utilized resource materials during training. Each program supplied teachers with a Teacher's Guide, documents for recording student's academic and social progress, and materials which suggest how the teachers can make materials and offer special activities to children. The difference between the resource materials for the two training programs was their level of prescription implied. The DARCEE Teacher's Guide, Record Keeping Book, and materials manual implied that teachers should follow closely the prescriptions in the documents. The Responsive Care resource materials were in the form of suggestions to teachers and encouraged divergence in the particular ways teachers used them.

APPENDIX B

A Sample of the DARCEE Objectives
and Child Record-Keeping System.*

*Selected pages from Solomon, et. al. A sequenced of DARCEE cognitive objectives: A record keeping system for the teacher. St. Louis, Missouri: CEMREL, Inc., 1972.

COLORS

1. Match	red, blue, yellow.
2. Recognize	" " "
3. Identify	" " "
4. Match	green, orange.
5. Recognize	" "
6. Identify	" "
7. Match	purple, brown.
8. Recognize	" "
9. Identify	" "
10. Match	black, white, gray.
11. Recognize	" " "
12. Identify	" " "

NUMBER CONCEPTS AND RELATIONS

Quantity Concepts

1. Recognize most, fewest.
2. Identify " "

Fractional Parts

1. Match whole, half.
2. Recognize " "
3. Identify " "
4. Match third, fourth.
5. Recognize " "
6. Identify " "
7. Subdivide wholes into halves.
8. " " " fourths.